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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,738	05/22/2006	George Fyfe	MAD-6	8872
2387 7590 12/27/2006 OLSON & HIERL, LTD. 20 NORTH WACKER DRIVE 36TH FLOOR CHICAGO, IL 60606			EXAMINER BUCHANAN, CHRISTOPHER R	
			ART UNIT 3671	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		12/27/2006	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/542,738

Applicant(s)

FYFE, GEORGE

Examiner

Christopher R. Buchanan

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3671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooley et al. (US 6,260,636) alone.

Regarding claim 1, Cooley discloses an attachment device for a ground drilling tool that enables cutting elements to be movably secured to the tool (abstract, col. 9 line 40), the cutting elements (328, Fig. 11) having a longitudinal axis, a first surface (340), and an engagement surface (side of 340) that is parallel to the longitudinal axis, wherein the attachment device includes a second surface (346, Fig. 12) on the tool which locates the first surface (col. 2 line 45), an engagement surface (348) on the tool which engages the engagement surface on the cutting element to resist side loads applied to the element (col. 7 line 10+), and a fastening means (col. 2 line 48, 450, 14B) that secures the cutting element to the tool.

The device of Cooley differs from the claimed invention in that the first and second surfaces do not have dowel holes and a dowel is not positioned in the dowel holes when the first surface is located on the second surface. However, the use of dowels to align and connect various components is well-known and commonly practiced

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in the art (see US 4,280,742). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Cooley to include dowel holes on the first and second surfaces and a dowel placed in the dowel holes to enable simple, effective alignment and connection of the cutting element to the tool.

Regarding claim 2, the cutting element has an arm (329) and the first surface (340) is a surface on the arm. Regarding claims 3 and 4, it would be within the abilities of one of ordinary skill in the art to select the location, placement, and number of dowels. Regarding claim 5, the engagement surfaces define a recess and projection. Regarding claims 6 and 7, the recess is a longitudinal channel with a base parallel to the first and second surfaces (see Fig. 12). Regarding claim 8, the projection has a shape that is complementary to the channel. Regarding claim 9, the channel is on the second surface. Regarding claim 10, the element includes a mounting box (central portion of element, Fig. 14B) containing the first surface. Regarding claims 11-13, the fastening means could be a plurality of threaded fasteners (450, Fig. 14B, abstract) that pass through apertures in the first surface to engage the second surface (Fig. 14A). It would be within the abilities of one of ordinary skill in the art to properly size the bolts and apertures as circumstances require.

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and are cited on PTO Form 892 enclosed herewith.

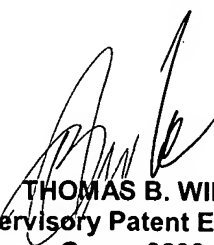
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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Buchanan whose telephone number is 571-272-8134. The examiner can normally be reached on Mon.-Fri. 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Will can be reached on 571-272-6998. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CB

  
**THOMAS B. WILL**  
Supervisory Patent Examiner  
Group 3600